

to this awakening by the fair and these annual meetings will bear its fruit. In the near future, it will be a difficult matter for a man to go to Chicago for a six weeks' course in eye, ear, nose and throat, and lung diseases, including asthma, and come back to be heralded as a savior of mankind. In the future it will be difficult for him to impress his one thousand townspeople by his postcards sent in catapultic rapidity, in the course of a week from Vienna, Freiburg, Berlin, Griefswald and Copenhagen.

Our men of affairs through these organizations are grasping the situation and demanding a knowledge of the subject in hand. The charlatan and the ignoramus are being placed in the same bag and dropped into oblivion. Let them stay there. Our universities and city fathers, backed by an awakened civic moral conscience, are taking hold of our responsible institutions and eliminating the unfit hanger-on.

We are realizing more and more that there is such a thing as *efficiency* and that we as a community have a right to demand the public service of the efficient without the influence of a gang of rough-neck politicians. We refuse any longer to pay taxes for good roads and, for the want of an expert, to see that road become impassable in six months' time, or to erect a hospital only to see it equipped by an inefficient management.

We welcome this association here because we think that it stands for a union of strong forces in the West that will help these sentiments along; that it stands for something else beside the reading of a scientific program and a pleasure jaunt. I believe that the sentiment of such an organization can be directed toward the accomplishment of large reforms along many lines throughout our glorious West; that the menace to the public from the spitting nuisance, the spittle on the street-car transfer and money, the drinking fountain and towel nuisance, unnecessary odor and noise nuisances, such as the clanging of bells, tooting of horns and the idiotic blowing of hideous sirens to tickle the vanity of some fat politician or hottentot potentate will become things of the past through the personal effort of individual members of this association.

I believe that the influence of this Fair at this particular time of stress and strain will be immense, that it will act as a balance wheel on a wobbly engine and will serve to make for a calm judgment where hotheads are more in evidence. As an educational factor, its stimulus will be felt by the medical profession probably more than in any other vocation on account of its influence on the laity in showing them the way to a rational judgment. We need a populace who have an intelligent knowledge of what we are trying to accomplish for them as well as an educated profession, that our legislators may not hamper the work and we are gathered together to-day to view this educational undertaking.

Gentlemen, I, in the name of the Eye, Ear, Nose and Throat Section of the San Francisco County Medical Society, welcome you and bid you God-speed in your work.

## "PULSATING EXOPHTHALMOS TREATED BY SLOW OCCLUSION OF THE COMMON CAROTID ARTERY WITH THE NEFF CLAMP."\*

By STEPHEN D. BRAZEAU, M.D., Spokane.

The only methods hitherto used for the treatment of traumatic pulsating exophthalmos are ligation of one or both of the internal carotids, intra-orbital excision of the aneurysm, external compression of the common carotid, gelatin injections, the administration of drugs and rest with the view of lowering blood pressure, the ligation of one or both common carotids, and ligation of the superior ophthalmic vein. De Schweinitz, Holloway and Bedell report 246 cases to date and although these cases are quite carefully tabulated it is impossible to draw any definite conclusions regarding the best method of procedure. All of these methods with the exception of the ligation of the common carotid and ligation of the superior ophthalmic vein have been of little or no avail and the former although immediately successful in a small percentage of cases is attendant with grave danger to the patient. The patients who recover suffer with cerebral ischemia for months or sooner or later develop symptoms of cerebral softening. The mortality following ligation of the common carotid as reported by various surgeons is 25% to 50%, death being due to anemia of the brain or secondary hemorrhage or cerebral disturbances.

According to LeFort 45% of cases have cerebral disturbances, Siegrist's statistics show 38%, Jordan 25%, and De Fourmestreaux (French Congress of Surgeons in 1908) reported 21% in his personal experience. Bryant and Buck state that out of ligation of the common carotid in 789 cases for various reason 323 or about 41% died. Danger not only occurs from cerebral softening but also from thrombosis.

Abernathy in 1798 was the first to attempt tying the common carotid to arrest bleeding and in 1806 Sir Astley Cooper successfully ligated the vessels for aneurysm. Since then a number of cases are reported and the rate of mortality owing to modern methods and asepsis has become less. But in spite of modern surgical technic the danger of sudden death from cerebral and other complications make the method of the ligation of a large vessel a very unsatisfactory mode of treatment. All of the men who have attempted the procedure realize this risk and have suggested the use of metal clamps as advocated by Lambotte, Matas, or Halstead for gradual occlusion.

Halstead's method consisted in the use of aluminum bands bent so as to include the artery but it accomplished only partial occlusion. Matas's bands were similar to those of Halstead but no more effective. Keen devised an apparatus by which he applied two bands and approximated them with an adjusting screw. Stratton of Oakland, California, in the *Journal of the A. M. A.* of March 1906 described an appliance used by him in slow occlusion of the abdominal aorta for

\* Read at the Third Annual Meeting of the Pacific Coast Oto-Ophthalmological Society, San Francisco, June, 1915.

aneurysm. It is a very ingenious apparatus but the results in this case were fatal.

The method which I wish to report in this paper is a slow occlusion of the common carotid in the treatment of a case of pulsating exophthalmos accomplished by the use of a clamp devised by Dr. James Neff, of Spokane. In this patient the results were immediate and in the two years which have transpired no untoward results have occurred.

The clamp consists of two aluminum bands with hinge joint. Upon the free ends are two grooves—a deep one in which the catgut is retained for the regulation of the distance between the plates and the automatic occlusion as the catgut absorbs, and a second groove in which a band of dental rubber is wound to approximate the plates gradually without wounding the intima of the vessel. The size of the aluminum bands will depend upon the vessel included.

The patient, A. H., age 39, a county charge referred to me by Doctor B. H. Roark July 25, 1913, presented the following history: Four years previous he had gotten into an altercation with a fellow laborer who gave him a terrific blow on the left cheek. He expectorated blood all night and felt indisposed but went to work next day. There occurred a roaring in the right ear two days afterward which sounded like the noise of an engine, and so intense at night he could not sleep lying down so sat up in a chair. This condition continued for two months. Three months later the right eye suddenly began to bulge, following a severe pain in temple. He was not incapacitated for work but complained of dizziness, diplopia, and attacks of faintness. He remained at work until the exophthalmos, roaring in head, loss of vision, and faintness grew so intense that he fell in a seizure and was unconscious for some time. He was removed to the Sacred Heart Hospital by Dr. Roark who later referred him to me for enucleation of the right eye. The patient showed upon superficial examination a decided exophthalmos, enlargement of the superficial supraorbital veins of the temple, paralysis of the external rectus muscle and congestion of the ocular and palpebral veins of the conjunctiva. The vision was reduced to counting fingers. The case was so interesting that a more careful examination was made at the office. There was a pulsating tumor upon digital examination of the orbital roof, a distinct bruit over the eyeball and supraorbital space (easily heard with the stethoscope) and fundus examination showed marked dilatation of the retinal vessels, and an optic neuritis. Left eye vision 6/6, and right eye vision fingers at three feet.

The diagnosis of pulsating exophthalmos was apparent. The patient was the father of eight children, incapacitated for work and the ligation of the common carotid was advised. He was told of its attendant danger but decided to take the risk. It was such an ideal case for the employment of the Neff gradual occlusion clamp that it was decided to try it upon the patient as it had been successfully used in experimental work.

Upon July 30, 1913, Dr. A. T. R. Cunningham, assisted by Dr. M. M. Patton, exposed the right common carotid and applied the device as described by Neff in an article in the *Journal of the A. M. A.* of August 26, 1911.

The pulsation and bruit disappeared in four days, the patient was comfortable and slept in a reclining position. In ten days he left the hospital with all annoying symptoms gone. The exophthalmos and dilation of the conjunctival veins gradually subsided and upon September 30, the patient was at work. February 12, 1914, there was still a bulging, the veins still somewhat congested

but vision with correcting glass had returned to 6/15 and the patient was feeling fine. Upon September 3, 1914, the exophthalmos was hardly perceptible, motility of the eye normal, there was no bruit, and no pulsation. Vision with correction had reached 8/10. With right eye he read number 2 Jaeger. Upon April 27, 1915, examination showed a complete retraction of the globe into the orbit, no bruit, no pulsation, no congestion of the conjunctival vessels or the veins surrounding the orbit and restoration of vision to 8/10 with his correcting lenses. He is free from dizziness and has had no fainting spells since the operation and has been working as a deliveryman since August 30, 1913, one month following operation.

From our experience in this case we conclude or suggest that in cases of pulsating exophthalmos or any other case where occlusion of a large blood vessel is indicated the most practical method is gradual occlusion by means of the Neff clamp. It seems to meet the requirements in such cases for it prevents the danger of a secondary hemorrhage which attends the sudden stoppage of the blood current, it gives ample time for establishment of the collateral circulation, and prevents cerebral ischemia and later cerebral softening resulting in 50% of cases by death. It also shortens the period of recovery; in this particular case the patient resuming work within thirty days of the operation. For the technic of applying the clamp I refer you to the article appearing in the *Journal of the A. M. A.* by Dr. Neff, or the articles by Dr. A. T. R. Cunningham of Spokane in the *Journal of the A. M. A.* of January 1914, in which this case is reported from the surgical standpoint.

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